UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,390	09/14/2004	Willem Van Dijk	2005-1025	9012

466 7590 10/05/2011

YOUNG & THOMPSON
209 Madison Street
Suite 500
Alexandria, VA 22314

EXAMINER	
CHEN, CATHERYNE	

ART UNIT	PAPER NUMBER
1655	

NOTIFICATION DATE	DELIVERY MODE
10/05/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DocketingDept@young-thompson.com

Office Action Summary	Application No.	Applicant(s)
	10/500,390	VAN DIJK ET AL.
	Examiner	Art Unit
	CATHERYNE CHEN	1655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 May 2011*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *27-29,31-44,48-50 and 52* is/are pending in the application.

4a) Of the above claim(s) *31-34,38 and 40* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *27-29,35-37, 39, 41-44, 48-50, and 52* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

Currently, Claims 27-29, 31-44, 48-50, and 52 are pending. Claims 27-29, 35-37, 39, 41-44, 48-50, and 52 and examined on the merits. Claims 1-26, 30, 45-47, and 51 are canceled. Claims 31-34, 38, and 40 are withdrawn.

The Appeal brief filed 23 May 2011 has been received. However, the claims as amended are not entered. The claims filed Oct. 14, 2010 are still under examination.

In view of the Appeal Brief filed on 23 May 2011, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

/Terry A McKelvey/

Supervisory Patent Examiner, Art Unit 1655

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 35-37 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Undue experimentation would be required to practice the invention as claimed due to the quantity of experimentation necessary; limited amount of guidance and limited number of working examples in the specification; nature of the invention; state of the prior art; relative skill level of those in the art; predictability or unpredictability in the art; and the breadth of the claims. In re Wands, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988).

Limited amount of guidance and limited number of working examples in the specification

While the Specification recited a composition of matter derivable from Aloe vera or a plant or an animal extract (page 2, lines 10-11), there is no indication as to how

NAG-25 is made. Applicant indicated that NAG-25 stands for no affinity for Sephadex G-25 (page 3, lines 28); however, the processes by which the composition is made cannot be determined because of the ambiguity surrounding the extraction protocol discussed on pages 21-22 which is explained in detail below:

Page 21 indicates that aloe extracts and reconstituted powders were placed over a Sephadex G-25 column. The Aloe extracts used for these experiments are undefined. Page 20 indicates that many different extracts were used such as AV-1 to Av-7, AV-15, AV-16 and AV-A to AV-F. Therefore, it appears that at least 15 extracts were subjected to the subfractionation protocol discussed on page 21. The Examiner does not know what these extracts are or if they are available to the public. Although Applicants state that "[a]ll of these products were Aloe inner gel fillet products. These gel fillets were prepared as described in CA patent No. 1305475" it is unclear how the extracts were originally prepared and what sources these originated from . Even if Applicants were to provide evidence that these extracts are known and readily available and that one of skill in the art would be able to read the extracts of the specification; e.g., AV-1 and be able to determine what extract this is and where to obtain them, the confusion surrounding making NAG-25 would still remain:

The protocol of pp.21-22 indicates: 'Fraction III, also indicated as Aloe vera NAG-25 extract, see hereunder.' So, it appears in this section, that NAG-25 is made by placing an extract of Aloe vera over Sephadex G25. However, page 22 under 'Aloe

vera NAG-25 extract' indicates: 10 gram spray dried Aloe vera spray dried extract originating from 2 liter Aloe vera extract was solubilized...passed over a Sephadex G-25 column...Aloe vera NAG-25 is collected as the 60-310 ml eluate." It is unclear first, what Aloe extract is used to make NAG-25, out of the 15 that were subjected to the purification protocol (it appears that all of the extracts may have been subjected separately to purification protocols although, the extracts may have been pooled- the Examiner is guessing that the extracts were treated separately, but the specification does not clearly state as such). Secondly, on page 21 under 'subfractionation' the aloe extracts and reconstituted powders were centrifuged and only the supernatant was used which was first passed over a 0.2 micrometer membrane prior to purification over a Sephadex G-25 column. There is no mention of centrifuging or filtering the extract under the NAG-25 protocol on page 22.

Therefore, it is unclear how to make NAG-25. Absent clear indication of how to go about making NAG-25 the skilled artisan could not reproduce this composition.

Predictability or unpredictability in the art

Because there are many ways to make and concentrate an extract, the unpredictability in the art would be high.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 27-29, 35-37, 39, 41-44, 48-50, and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yaron et al. (1992, J Agric Food Chem, 40: 1316-1320) in view of Hart et al. (1989, Planta Medica, 55: 509-512).

For the purposes of searching for and applying prior art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, "consisting essentially of" will be construed as equivalent to "comprising." See, e.g., PPG, 156 F.3d at 1355, 48 USPQ2d at 1355 ("PPG could have defined the scope of the phrase consisting essentially of' for purposes of its patent by making clear in its specification what it regarded as constituting a material change in the basic and novel characteristics of the invention."). See also > AK Steel Corp. v. Sollac, 344 F.3d 1234, 1240-41, 68 USPQ2d 1280, 1283-84 (Fed. Cir. 2003) (Applicant's statement in the specification that "silicon contents in the coating metal should not

exceed about 0.5% by weight" along with a discussion of the deleterious effects of silicon provided basis to conclude that silicon in excess of 0.5% by weight would materially alter the basic and novel properties of the invention. Thus, "consisting essentially of" as recited in the preamble was interpreted to permit no more than 0.5% by weight of silicon in the aluminum coating). MPEP 2111.03.

Thus, the claims can still be interpreted as reading, "comprising".

Yaron et al. teaches use of aloe vera in cosmetic formulation and in health foods (Introduction, paragraph 1) and polysaccharide profile of aloe vera gel comprises 60.2% mannose, 22.2% glucose, 1.6% galactose (Table I). The anionic polysaccharides have significantly higher viscosity and yield point (page 1318, left column, paragraph 1). Aloe vera is a plant. Aloe vera inherently has anti-bacterial or anti-inflammatory effects. Aloe gel is used in topical treatment of injure skin and in digestive tract (Introduction, paragraph 1). Fresh aloe gel was dialyzed to remove low molecular weight sugars and quinones (page 1316, Chemical Anaylsis). The isolated aloe vera would consist of the negatively charged polysaccharides from aloe vera. Anionic polysaccharides could serve to preserve aloe vera gel (page 1319, right column, last paragraph).

However, Yaron et al. does not teach 60-90% mannose, 30-10% glucose, 1-10% monosaccharide, 100-300 MW, separation on anion-exchange chromatography, tablet, capsule and syrup, an injectable dosage.

Hart et al. teaches an immunomodulatory substance from aloe vera leaves, where the extract is fractionated by anion-exchange chromatography and gel filtration to yield polysaccharides, at 320,000 MW and 200,000 MW, in BI, which contains 92.1%

mannose, 3.2% glucose, 3.8% galactose, and 0.9% arabinose; BII, which contains 83.7% mannose, 8.8% galactose, 3.9% glucose and 3.6% arabinose (page 510, Results). Aloe vera polysaccharide can have glucose/mannose ratios ranging from 1:5.1 to 1:19 (page 512, Discussion). The range from 1:5.1 and 1:19 is about 1:5 and 1:20. Anion-exchange column will isolate negative charge polysaccharides because the column is positively charged. Chromatography is a form of ultrafiltration. Aloe can be used to treat bacterial infection (Introduction, paragraph 1). Low molecular weight constituents do not have modulation of complement activity (page 510, Result, paragraph 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make a composition comprising 60-90% mannose, 30-10% glucose, 1-10% monosaccharide, 100-300 MW of the active agent combination for the following reasons. Hart et al. teaches an immunomodulatory substance from aloe vera leaves, where the extract at 320,000 MW and 200,000 MW, in BI, which contains 92.1% mannose, 3.2% glucose, 3.8% galactose, and 0.9% arabinose; BII, which contains 83.7% mannose, 8.8% galactose, 3.9% glucose and 3.6% arabinose (page 510, Results). Aloe vera polysaccharide can have glucose/mannose ratios ranging from 1:5.1 to 1:19 (page 512, Discussion). The range from 1:5.1 and 1:19 is about 1:5 and 1:20. Yaron et al. teaches polysaccharide profile of aloe vera gel comprises 60.2% mannose, 22.2% glucose, 1.6% galactose (Table I). Thus, it would have been obvious to make a concentrated composition containing mannose, glucose, galactose for use as a supplement to the diet.

Additionally, the amount of a specific ingredient in a composition that is used for a particular purpose (the composition itself or that particular ingredient) is clearly a result effective parameter that a person of ordinary skill in the art would routinely optimize. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). Thus, optimization of general conditions is a routine practice that would be obvious for a person of ordinary skill in the art to employ. It would have been customary for an artisan of ordinary skill to determine the optimal amount of each ingredient to add in order to best achieve the desired results, especially within the ranges taught by the reference. Thus, absent some demonstration of unexpected results from the claimed parameters, this optimization of ingredient amount would have been obvious at the time of applicant's invention.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to isolate higher molecular weight polysaccharides because low molecular weight polysaccharides do not have activity (see Hart et al.). One would have been motivated to make polysaccharides with higher molecular weight isolates for the expected benefit of biological active polysaccharides from aloe vera as taught by Yaron et al. and Hart et al. Absent evidence to the contrary, there would have been a reasonable expectation of success in making the claimed invention from the combined teachings of the cited references.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use aloe vera as a cosmetic or food because Yaron et al. teaches use of aloe vera in cosmetic formulation and in health foods (Introduction, paragraph 1) and Hart et al. teaches an immunomodulatory substance from aloe vera leaves. One would have been motivated to make aloe vera for cosmetic and food uses for the expected benefit of immunomodulatory effect of aloe vera. Absent evidence to the contrary, there would have been a reasonable expectation of success in making the claimed invention from the combined teachings of the cited references.

The references also do not specifically teach formulating the composition in the tablet, capsule and syrup, and injectable forms claimed by applicant. These pharmaceutical forms are well known in the art to be acceptable means of administering a pharmaceutically active substance. Based on this knowledge, a person of ordinary skill in the art would have had a reasonable expectation that formulating the composition taught by the references in the claimed forms would be successful. Therefore, an artisan of ordinary skill would have been motivated to formulating the composition taught by the reference in the forms claimed by applicant.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make a composition consisting of 70-90% D-mannose and 30-10% D-glucose, and 0-10% monosaccharide and polysaccharides have an average molecular weight of about 100-300 kD. Yaron et al. teaches that aloe gel polysaccharide composition varies upon production conditions and because aloe gels are known to contain the same sugars as claimed and are known to be purified from

aloe having similar molecular weights and sugar profiles, that absent any evidence that the aloe gel of the claims displays any unexpected result over the aloe gel of the prior art, that the claimed invention appears to be an obvious variation of known aloe products. Thus, it would have been obvious to make a concentrated composition containing 70-90% D-mannose and 30-10% D-glucose, and 0-10% monosaccharide and posaccharides have an average molecular weight of about 100-300 kD for use as a supplement to the diet, topical use, and injection. Additionally, the amount of a specific ingredient in a composition that is used for a particular purpose (the composition itself or that particular ingredient) is clearly a result effective parameter that a person of ordinary skill in the art would routinely optimize. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). Thus, optimization of general conditions is a routine practice that would be obvious for a person of ordinary skill in the art to employ. It would have been customary for an artisan of ordinary skill to determine the optimal amount of each ingredient to add in order to best achieve the desired results, especially within the ranges taught by the reference. Thus, absent some demonstration of unexpected results from the claimed parameters, this optimization of ingredient amount would have been obvious at the time of applicant's invention.

Conclusion

No claim is allowed.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Catheryne Chen whose telephone number is 571-272-9947. The examiner can normally be reached on Monday to Friday, 9-5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terry McKelvey can be reached on 571-272-0775. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/PATRICIA A LEITH/

Primary Examiner, Art Unit 1655

Catheryne Chen
Examiner Art Unit 1655